**Organic: Isomers**

1. Which compound listed below is an isomer of hexane?

a) cyclohexane b) 2-methylpent-2-ene

c) 2,2-dimethylbutane d) 2,4-diethylbutane

2. Which substance below is an isomer of 3- ethyl-2-methylpentane?

a) cyclooctane b) 2,2,3,3-tetramethylbutane

c) 2,2,3- trimethylpent-1-ene d) 1,2,3-trimethylbenzene

1. Which of the following substances is **NOT** an isomer for 2- methylbutanoic acid?
2. 3-methylbutanoic acid b) pentanoic acid
3. 2-methylpropanoic acid d) 2,2-dimethylpropanoic acid
4. The compound that is NOT an isomer for C5H10 is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a) methylcyclobutane b) cyclopentene

c) 2-methylbut-1-ene d) 1,2-dimethylcyclopropane

5. Which substance below is an isomer of 3-methyl-3-hexene?

a) methylcyclohexane

b) cycloheptene

c) 2,3,3- trimethylpent-1-ene

d) p-dimethylbenzene

1. Which of the following substances is NOT an isomer for 3- methylpentan-2,3-diol?
2. 1,3-hexanediol

b) 4-methyl-1,1-pentanediol

c) hexaneoic acid

d) 3,3-dimethyl-1,2-butanediol

7. Which of the following is an isomer of C8H17OH?

a) octan-2,3-diol

b) 3-ethyloctan-2-ol

c) 2-ethylheptan-3-ol

d) 2-methylheptan-3-ol

8. Which compound is an isomer of heptyne?

a) 2,4-dimethylhex-2-yne

b) 3,3-dimethyl hex-2-yne

c) 2,3,3-trimethylbutan-1,3-diene

d) 4.4-dimethylpent-2-yne

9. Which of the following is **NOT** an isomer for C4H10?

a) 2-methylpropane

b) methylpropane

c) 2-ethylpropane

d) butane

1. Consider the condensed structural formula : **CH3CH2CH2OH**

This formula represents a(n) \_\_\_\_\_\_\_ compound that contains a(n) \_\_\_\_\_\_\_\_functional group and is classed as a(n) \_\_\_\_\_\_\_

1. aliphatic, carbonyl group, ester

b) aromatic, hydroxyl, ester

c) aliphatic, hydroxyl, alcohol

d) aromatic, carbonyl, alcohol

1. Consider the four chemical compounds listed in the table below

|  |  |
| --- | --- |
| 1 | Propanoic acid |
| 2 | Methylpropanoate |
| 3 | Acetic acid |
| 4 | methylmethanoate |

The formulas above that represent **structural ISOMERS of each other** are

1. 1 and 2
2. 1 and 4
3. 2 and 3
4. 3 and 4

12. Which of the following IUPAC names identifies an isomer for C6H12?

a) cyclohexene

b) methylcyclopentane

c) 4-methylpentyne

d) hex-3-yne

13. All of the following compounds are isomers of pent-2-ene, except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) 2,2 - dimethyl propane

b) cyclopentane

c) methylcyclobutane

d) 3 - methyl but-1-ene

**14. Numerical response question**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Left justify your answer in the boxes provided.

|  |
| --- |
| List all the compounds in the list below that are structural isomers of oct-3-ene.   1. 5,5 – dimethyl hex-3-ene 2. 4-ethyl -2-methyl pentane 3. Ethyl cycloheptane 4. Oct-1-ene 5. 2,3-dimethyl pentene   List the answer(s) in ascending order. |

Solutions:

1. C
2. B
3. C
4. B
5. A
6. C
7. D
8. D
9. C
10. C
11. D
12. B
13. A
14. 14